

The essays on directly eugenical subjects cover a great deal of ground. "Our deteriorating inheritance" gives a clear picture of the current effects of difference in the birth-rate. "Heredity and the Mind" contains "fourteen points" of more permanent interest than those of Prof. Holmes' better known compatriot; the unimportant assumption in point 10, that "most of the factors making for high mental development behave as dominants" alone cannot yet be regarded as more than a probable guess.

Elsewhere fresh evidence of an original type is presented for the view that infant mortality is selective. The effects of civilised organisation in increasing as well as diminishing the vigour of natural selection forms a topic to which we hope the author will recur at greater length. It is impossible to touch upon all the points of eugenic importance dealt with in this group of essays; but attention should be called to the discussion of "Do early marriages produce inferior offspring?" and to the two important essays on birth control. The following criticism of birth control propaganda is worth quoting.

"That our racial inheritance will deteriorate unless people of good hereditary qualities have at least the minimum of three or four children needed to keep up their stock is a proposition seemingly too obvious to require stating. Nevertheless it is something that needs to be said. It is something which most people probably do not know. And it is something about which the Neo-Malthusians seem curiously reluctant to inform them."

Nothing need be said of the concluding essays save that they are moderate and careful surveys of the relevant facts as at present ascertained. The book as a whole marks a step of great importance in the development of well weighed decisions in eugenic questions, and no private collection of representative works on the subject will be complete without it.

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Kaup, J. (Professor of Hygiene in the University of Munich). *Volks-hygiene oder Selektive Rassenhygiene*. Leipzig, S. Hirzel. 1922. Pp. 179.

THE value of this work resides largely in the clear way in which it raises an important social issue implicit in Darwinism,—viz., the question whether the progress of medicine and hygiene may not be in the end detrimental to the human race, by rendering biologically viable the degenerate types which social conditions under civilisation are everywhere fabricating in large quantities. The author's answer is an emphatic negative, but the instructiveness of his work is largely due to his readiness to affirm whatever is requisite to justify his negation. So he rejects Darwinism. For Prof. Kaup, a professor of hygiene, simply cannot be a Darwinian. He believes that "the Darwinian principle of natural selection has always conflicted with medicine and hygiene. The selection theory does not operate creatively, but only destructively, and a selective race-hygiene cannot work otherwise! (p. 178). Hence "we must liberate ourselves completely from this pernicious hypothesis," for which Prof. Kaup wishes to substitute Nägeli's conception of an 'idioplasm' with invisible rudi-

ments realising its inherent potentialities of organisation and adaptation in a determinate (and not fortuitous) manner until it achieves perfection of type. Prof. Kaup interprets this doctrine into what is in effect a complete denial of the mutability of species, at all events as regards man. He does not hesitate to say (p. 90) that "the organic adaptedness of the species as a whole, or type, makes selectionist attempts at breeding appear vain from the outset. We do not as a matter of fact need the struggle for existence in order to understand adaptedness in nature." Adaptedness (to its own type or 'norm') is a property of the species, and every kind, species, race or kin has its definitely determined norm-image ('*Normbild*') which corresponds with its type" (p. 96). Amid the fluctuating variations "the norm stands fast immovably" (*ibid*): it is "not a value but the highest value" (*ibid*), any doctrine of 'degeneration' is relative to it, and its notion is "firmly anchored in the conception of species" (p. 97).

Clearly then Prof. Kaup is a firm believer in the fixity of the human species, though he just mentions that it is held to have been mutable in palaeolithic times (p. 90), and leaves open the question of how in general species may have arisen (p. 91). He bases his belief (p. 90-91) on the rarity of large mutations, which therefore cannot have formed an important factor in the evolution of species (*sic*), on the necessity of the production of new 'genes' if the hereditary substance of a race is to improve, on the absence of such mutations in man (in historical times), on their inability to persist in a homozygotically uniform material, as shown by Johannsen, and on their futility in any case, even if they should occur, in view of the 'coupling' and 'crossing over' established by Morgan.

Of course, with these doctrines, eugenics becomes an impossible undertaking, and Prof. Kaup duly trots out the stock objections of the conservative who, not seeing that the devil is after him, will not move until assured of the perfect safety of every step he is asked to take, and does not trust himself (or any one else) to pick his way and to learn from experience. But he is more specifically hostile to the 'race-hygiene' of certain German Darwinians, who have contaminated scientific eugenics with the mad race-theories of Gobineau, and have moreover conceived Darwinism in a somewhat shallow way. Prof. Kaup is very sensible of the political dangers with which the doctrine of Nordic superiority is fraught in a country with the very mixed population actually found in Germany: a professor of Hygiene in the capital of a country like Bavaria inhabited chiefly by Alpines, does well to be so. As moreover they happen also to be Catholics, this may have a bearing on his hostility to Darwinism. It must be confessed however that his judgment on the eugenical movement in England is much more lenient; he commends it for recognising 'breeding' in the educational as well as in the biological sense (p. 171-2).

Nevertheless it is clear that parts of Prof. Kaup's criticism are applicable also to the views of British eugenicists, and that it may be profitable to answer them. I would comment first on some misconceptions of Darwinism to which Prof. Kaup seems to commit himself. (1) It is no doubt both true and important that Darwinism is not a complete theory of the genesis of adaptation: it plainly presupposes

adaptedness enough to live in the organism subjected to natural selection, and so it is possible to conceive natural selection as merely the mechanism whereby a pre-existing adaptation is readapted and readjusted to changing conditions. But though the Darwinian theory hardly drew enough attention to it, it certainly does not deny this (cf. p. 61). (2) Darwinism has surely never claimed to be a theory of the origin of variations: the variability of organisms is a postulate, and the source of every novelty that enters the organic world. Hence the fortuitous distribution of the variations which Darwin assumed must be understood, not dogmatically, but methodologically; it is intended merely to bring out the potency of natural selection. (3) It is an error to which Darwin lent no countenance, to assume that natural selection must result in *progressive* evolution: in itself it is just as capable of conducting to degeneration, and if there has been progress on balance, that is an empirical fact which the theory does not attempt to explain. (4) It is surely absurd to accuse Darwinism (whether "ethical" or unqualified) of extreme and unbridled individualism (p. 158, 178), seeing that it is the race and not the individual that survives, and that the marvellous amounts of parental and social self-sacrifice which zoology records must have developed under natural selection.

In the next place it must be remarked that Prof. Kaup's interpretation of Mendelism also seems perverse. It is possible, no doubt, to view Mendelian segregation, in the interests of a fixity of species, as a mechanism for *undoing* the effects of crosses; but it is no less feasible to conceive it as a means for *combining* excellent qualities not before found united, and for producing a mixed race superior to *both* its parent stocks and so capable supplanting both. It is the inherence of this possibility in Mendelism which makes it relevant to eugenics, and to the problem of biological progress. And it is also a confutation of the pure-race fanatics. They may be challenged to prove that the qualities they ascribe to the pure Nordics are not the results of a mixture; certainly the pure Nordics were not the originators of civilisation and remained barbarians until 1000 years ago.

Lastly it seems a mistake in Prof. Kaup to try to block eugenical reform by an appeal to the philosophic argument that it would involve *value-judgments* and that these are beyond the competence of a descriptive science like biology (pp. 150, 158, 171). For not only is this inconsistent with his calling the norm the supreme value (as quoted above) but the distinction itself is false.. All the sciences are concerned with values (e.g., 'truth'), though they may temporarily neglect some in order to cultivate others. Moreover, it would utterly stultify his own science of hygiene. For this surely studies the conditions of health in order to improve the health of the people. Similarly the eugenist can study the biological and social sciences in order to derive from them methods for improving the intrinsic quality of human stocks. He may fail, of course, because the human race is a very bad patient; but there is no *a priori* reason why a society, which admittedly has the power of deteriorating its *personnel*, should not also have the power of improving it.

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